

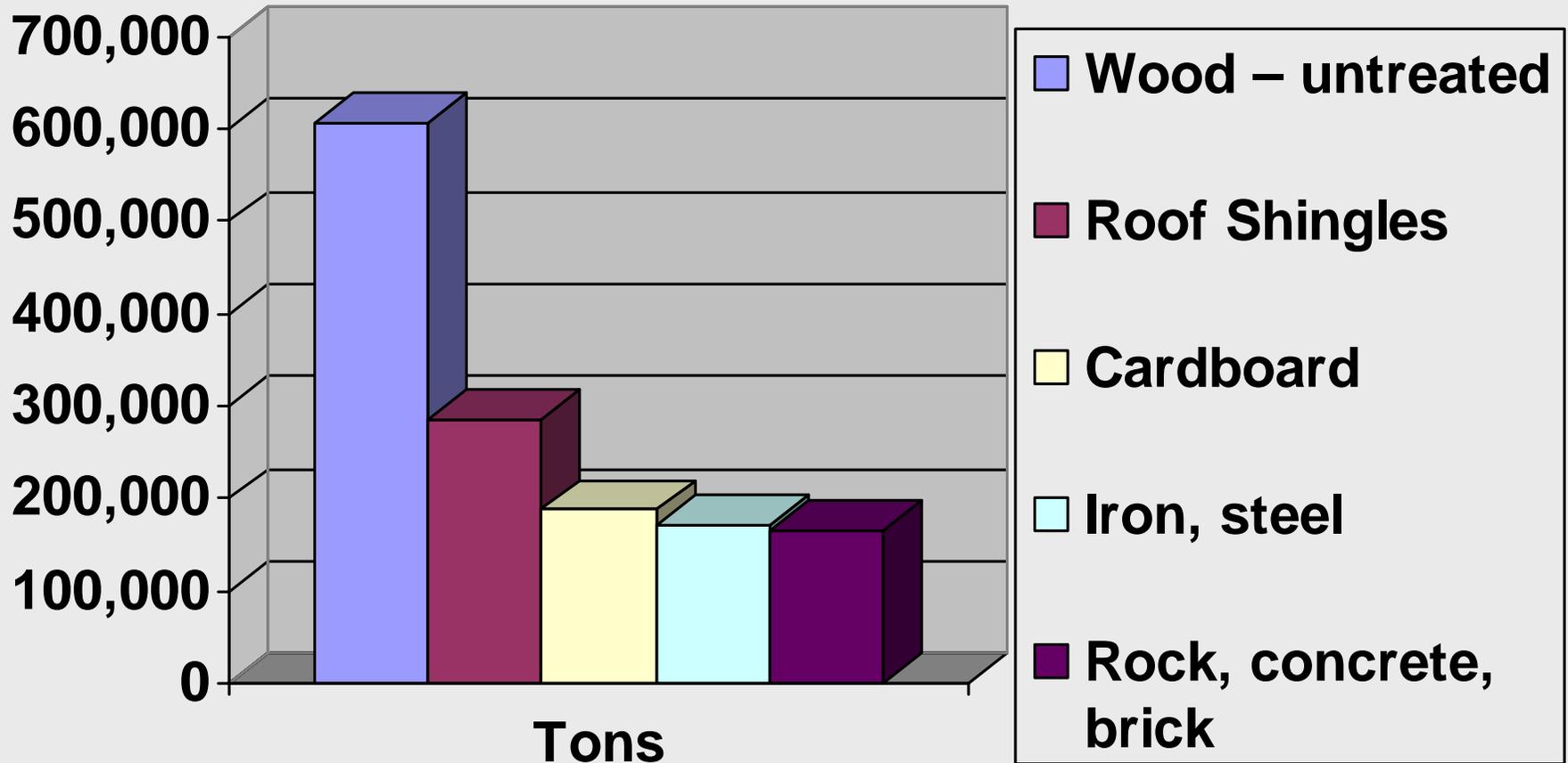


# Construction Waste Recycling





# Construction wastes



# Why? Benefits?

- **Community benefits**
  - Materials reused - reduced cost - Historical salvage
  - Reduced wastes = reduce global warming
- **Green building recycling goals**
- Saving money    reduced waste = reduced cost
- Safer job site
- Local ordinances



### pollution prevention

>Initiatives

>Outreach

Alternative Fuels

Automotive

Food Processing P2

**Green Construction and Demolition**

Restaurant P2

Shooting Range Stewardship

>Partnerships

>Recycling

>Regulatory Integration

>RETAP

>Green Chemistry

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## Green Construction and Demolition

### Construction Environmental Resources

The construction and operation of homes and commercial buildings contribute significantly to a community's landuse and transportation impacts as well as the energy demand. Efforts known as "green building and deconstruction are working to minimize these impacts.

> [More](#)

### Information

- [Construction Resources](#)
- [FAQ - Demolition, Deconstruction, and Decommissioning Frequently Asked Questions](#) **PDF**
- [FAQ - Green Building Frequently Asked Questions](#) **DOC**
- [Green and Sustainable Buildings in Michigan](#)
- [Introduction to Green Building - Dept. of Energy](#)
- [Making the Case for Green Building](#)
- [Michigan Green Building Case Studies](#)
- [Publications - Construction related](#) **DOC**
- [Waste Recycling - Local contacts](#)
- [Waste Recycling - State resources](#)

### Upcoming Events

- **August 21-23, 2008**  
[Great Lakes Green 2008](#)  
Grand Rapids, MI

### Related Links

- [Building Materials -](#)

[www.michigan.gov/deqconstruction](http://www.michigan.gov/deqconstruction)

### Departments/Agencies

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#### DEQ Quick Links

- [DEQ Calendar](#)
- [DEQ Military Salute](#)
- [DEQ Who Does What List](#) **PDF**
- [DEQ Publications](#)
- [DEQ Acronyms](#) **PDF**
- [DEQ Laws and Rules](#)
- [DEQ Shortcuts](#) **PDF**
- [Public Comment Opportunities](#)
- [DEQ Staff Spotlight](#)
- [DEQ Forms](#)
- [DEQ Training & Workshops](#)





# Waste Recycling – Local

## CONTACT INFORMATION

CONTACT INFORMATION				Asphalt-Concrete	Salvaged Architecture	Carpet Padding	Ceiling Tiles	Construction Debris	Corrugated Cardboard	Demolition Debris	Fluorescent Lights	Window Glass	Mercury	Pallets	PVC	Scrap Lumber	Stumps-Trees
MACOMB COUNTY HABITAT FOR HUMANITY RESTORE 37829 GROESBECK *			EMILY CALVERT, I DIR. 586/263-1540 *	-	(A)	-	-	(C)	-	-	-	-	-	-	-	(SL)	-
CLINTON TWP. MI macombhabitat.org	48036-		restore@macombh FAX	INTERESTED IN USEABLE BUILDING MATERIALS, PAINT AND FURNITURE.													
MID-MICHIGAN RECYCLING 24935 21 MILE RD. *			JOHN SMITHLING, MGR. 586/598-5807 810/560-0481	-	-	-	-	-	-	-	-	-	-	(P)	-	-	(T)
INTERESTED IN CLEAN CHIPS, BRUSH, LOGS, STUMPS, INDUSTRIAL WOOD AND PALLETS.CAN PROVIDE GRINDING SERVICE.																	
MACOMB MI www.mid-michiganrecycling.com	48042-		* FAX														
JOE DAVIS CRUSHING, INC. 25501 SHERWOOD *			MARY LOU VAN WATERSCHOOT, MGR. 586/757-3612 *	(CA)	-	-	-	-	-	-	-	-	-	-	-	-	-
INTERESTED IN CLEAN, BROKEN CONCRETE ONLY. NO WIRE OR MESH																	
WARREN MI *	48091-		* FAX 586/575-3612														



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## pollution prevention

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  - Alternative Fuels
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  - Food Processing P2
  - Green Construction and Demolition**
  - Restaurant P2
  - Shooting Range Stewardship
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Building Material Restores - donations and resale

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Departments/Agencies

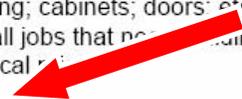
Online Services

Surveys

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## ADDITIONAL RESOURCES:

### Construction Recycling Resources

- [Brownfield Resources](#)
  - [EPA CD Resources for Brownfield Projects](#)
- [Building Material Recycling Resources\(doc\)](#)
- [Chicago Construction Recycling Requirements](#)
- [EPA Building Savings](#)- case studies
- [EPA website for Residential / Municipal Wastes](#)
- [MDEQ Recycling Web site](#)
- [Recycling Resources\(doc\)](#)

### Construction Waste Management

- [Construction Waste Management \(doc\)](#)  
Incorporating recycling into specs
- [Toxics Management, Recycling & Disposal \(doc\) Also see the FAQ.](#)  
Asbestos; Lead; Mercury; and Hazardous Waste (general)
- [Waste Spec \(model specs for construction recycling\)](#)



## Deconstruction Resources



- [Deconstruction Companies](#)  
(Also check the yellow pages)
- [Building Design Standards](#)
  - [Awards for deconstruction designs - Lifecycle Building Challenge](#)
  - [Design for Deconstruction](#)
  - [Design for Disassembly](#)
- [Deconstruction - Feasibility of](#)
- [Deconstruction Guide - Deconstruction Institute](#)
- [Deconstruction Guide - HUD](#)

## Environmental Compliance

- [Air Quality \(doc\)](#)  
Includes information on asbestos, fugitive dust, etc.
- [Federal Compliance Resources](#)
  - [CICA - Construction Industry Compliance Assistance](#)
  - [Federal Compliance Requirements - Construction](#)
  - [Federal Programs - links](#)
  - [Managing Your Environmental Responsibilities - Construction](#)
- [Frequently Asked Questions \(FAQ\)](#)
- [Inert Materials Notification \(pdf\)](#)  
Required for 1,000 cubic yards of brick, masonry, pavement, broken concrete used for fill, riprap, slope stabilization, etc.
- [Regulations - see the FAQ](#)
- [Stormwater Requirements](#)

### pollution prevention

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# Recycling Companies

## Companies that Recycle Construction & Deconstruction Materials

(This is not an endorsement of any company listed – This is provided for informational purposes only.)

Name	Address	Phone	Website / Comments
<b>Southern Michigan Restores</b>			
HFH ReStore	2811 Treat Highway <b>Adrian</b> 49221	517-266-0746	Mngr: Tracey Doering-Beatty <a href="http://www.habitat-lenawee.org">www.habitat-lenawee.org</a>
HFH ReStore	170 Aprill Drive <b>Ann Arbor</b> 48103	734-822-1530	Mngr: Ray Frye www.h4h.org restore@h4h.org
Recycle Ann Arbor (RAA)	2420 S. Industrial Hwy <b>Ann Arbor</b> 48104	734-662-6288	Reusable materials accepted at their site <a href="http://www.recycleannarbor.org">www.recycleannarbor.org</a>
HFH ReStore	551 W. Michigan Ave <b>Battle Creek</b> 49015	269-966-2502	Mngr: Lee Wever Fax 269-966-2568 <a href="mailto:bcrestore@ctsmail.net">bcrestore@ctsmail.net</a> <a href="http://www.habitatbc.org">www.habitatbc.org</a>
HFH ReStore	2302 Plaza Dr. <b>Benton Harbor</b> 49022	269-927-0006	Mngr: Timothy Walls and Robert Mesa
HFH ReStore	7198 Grandriver <b>Brighton</b> 48114	810-220-9986	<a href="mailto:Peter.Wang@lchfhresalestore@sbcglobal.net">Peter Wang lchfhresalestore@sbcglobal.net</a> <a href="http://www.livingstonhabitat.org">www.livingstonhabitat.org</a>



2420 South Industrial Highway • Ann Arbor, MI 48104 • 734.662.6288

*Committed to reducing waste and conserving resources through reuse.*

- about us
- FAQs
- human resources
- brochures
- ecology center

[amazon.com](https://www.amazon.com)

# The ReUse Center

## Urban Wood For Sale

The ReUse Center has an extensive stock of urban reclaimed wood. Our network of local sawmills turns dead urban trees into products that bring lasting value and character to your home. [Click here for details.](#)

## [Visit the Collector's Corner!](#)



Check out the ReUse Center's Collector's' Corner, showcasing timeless furniture, original artwork, and rare antiques. You never know what treasures you might find in the Collector's Corner!

## [NEW: ReUse on Review](#)

### IRS Links Regarding Donations

- [Noncash Charitable Contributions Form](#)
- [Determining the Value of Donated Property](#)
- [Charitable Contributions](#)



*Enriching our whole community through a legacy of affordable home ownership.*

# Habitat for Humanity® ReStore

## Surplus and Used:

- Building Supplies
- Furniture
- Appliances
- Tools

 DONATE TODAY

Privacy by  SafeSubscribe<sup>SM</sup>

Shop at  or  
 and earn money  
for Habitat!

[Click here](#) to find out how

Our Habitat  
Partners Are



**Furniture:** bookcases, entertainment centers, hutches, coffee tables, dressers, end tables, tables and chairs, couches, recliners, file cabinets, desks, framed mirrors



**Appliances:** washers, dryers, ranges, ovens, microwaves, refrigerators, dishwashers, range hoods, ac units

Brighton HFH Oct 2005 – April 2007

**Diverted 670 tons from landfill**

### pollution prevention

- >Initiatives
- >Outreach
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  - Restaurant P2
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- [Construction waste recycling companies and information](#) (doc)
- Also check your local contacts and yellow pages.

### Departments/Agencies

### Online Services

### Surveys

### RSS Feeds

#### Related Content

- Survey for Construction and Demolition Web Site
- Construction Resources
- Construction Waste Recyclers
- FAQ - Green Building

#### Frequently Asked Questions

- FAQ - Demolition, Deconstruction, and Decommissioning Frequently

#### Asked Questions

- Introduction to Green Building - Dept. of Energy
- Making the Case for Green Building
- Construction Related

#### Environmental Publications

- Green and Sustainable Buildings in Michigan
- MDEQ District Office is a "Green" State Office Building

# Recycling Companies





# Construction Waste Recycling

## Material Recycling

Construction & Demolition (C&D) debris is waste resulting from construction, building remodeling, repair, deconstruction or demolition operations. Below is a list of some of the materials with links to company listings, resources and frequently asked questions. (Also check your local contacts and yellow pages.)

<i>Material</i>	<i>Recycling Companies</i>	<i>Additional Resources</i>
Asphalt	<a href="#">RMMD</a> 	<a href="#">1,000 yds notification</a> <a href="#">Ashalt Shingle Recycling Best Practices</a>
Brick	<a href="#">RMMD</a> <a href="#">Bldg Matl List</a>	<a href="#">FAQ</a> <a href="#">1,000 yds notification</a>
Cardboard	<a href="#">RMMD</a>	
Carpet	<a href="#">RMMD</a> <a href="#">Bldg Matl List</a>	<a href="#">FAQ</a>
Concrete	<a href="#">RMMD</a> <a href="#">Bldg Matl List</a>	<a href="#">1,000 yds notification</a> <a href="#">www.concreterecycling.org</a>
Drywall	None available in Michigan	<a href="#">Drywall Reuse</a> (pdf) <a href="#">www.drywallrecycling.org</a>

## RMMD Frequently Requested Lists

Updated January 2008

### Construction & Demolition Debris

### Oils, Solvents and Other Liquids

- Asphalt & Concrete
- Bark, Sawdust, Trees & Other
- Bricks
- Carpet/Padding
- Ceiling Tiles
- Construction Waste
- Demolition
- Fluorescent Bulbs
  - Regulatory Guidance Document Available
- Mercury
  - See Mercury P2 website for more information
- Paint
- Pallets
- Polyvinyl Chloride-Vinyl (PVC) #3
- Salvaged Architecture
- Scrap Lumber
- Window Glass
- Antifreeze
  - Regulatory Guidance Document Available
- Used Oil
  - Regulatory Guidance Document Available

Fluorescent lights, mercury	<a href="#">RMMD</a>	<a href="#">FAQ</a>	No reuse allowed – recycle only
Glass	<a href="#">RMMD</a>		Reuse of clean glass not restricted
Paint		<a href="#">FAQ</a>	<a href="#">Paint Recycling</a>
PVC / Vinyl	<a href="#">RMMD</a> <a href="#">Building Matl list</a> <a href="#">PVC Resources</a>		
Shingles	<a href="#">Recycling Companies</a>	<a href="#">FAQ</a>	<a href="#">DEQ Asphalt Shingle exemption</a> <a href="http://www.shinglerecycling.org">www.shinglerecycling.org</a>
Styrofoam	<a href="#">RMMD</a>		
Toxics –mercury, pesticides, etc	<a href="#">Household</a> <a href="#">Commercial</a>	<a href="#">FAQ</a>	
Vinyl / PVC	<a href="#">RMMD</a> <a href="#">Building Matl list</a> <a href="#">PVC Resources</a>		
Wood	<a href="#">Pallet Recycling</a> <a href="#">RMMD</a> <a href="#">Wood Recycling</a>	<a href="#">FAQ</a>	<a href="#">Scrap Wood Burning</a>



# Approved Shingle Recycling

## Central Michigan

- Crutchall Resource Recycling Company 517-899-1560  
2127 W. Willow Street, Lansing, MI

## SE Michigan

- Ideal Recycling, Inc. 248-953-2941  
19300 W. Eight Mile Road, Southfield, MI

## West Michigan

- Crutchall Resource Recycling Company 616-241-5553  
631 Chestnut Street, SW, Grand Rapids
- 6301 North Dort Highway, Flint 810-618-5755
- 3303 Gembrit Circle, Kalamazoo 269-720-4206

# Miscellaneous Resources





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- Planning & Environment**
- Environmental Portal
- Boards & Commissions

## Washtenaw County Recycling Guide

- [Recycle Guide \(pdf\)](#)
- [Recycling in Your Community](#)



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## Turning Trash Into Treasure

A guide to disposal options for not-so-recyclable materials in Washtenaw County.

## MATERIALS LISTED IN THIS GUIDE:

Ammunition	2	Freon	24
Antifreeze	2-3	Furniture	24-26
Appliances	3-5	Kitchenware	26-27
Architectural Items	5	Mattresses	27-28
Art Supplies	5-6	Medical Supplies	28
Asbestos	6	Mercury	28-29
Automobiles	7	Metal	29-30
Baby Supplies and Diapers	7-8	Motor Oil	30-31
Bags	8	Office Supplies	31
Batteries – Automotive	8-9	Packing Materials	32
Batteries - Household & Rechargeable	9-11	Paint	32-33
Bicycles	11	Pet Supplies	33
Books	11-14	Photography Supplies	33-34
Bricks and Concrete	14	Propane Tanks	34
Building Materials	14-15	Records, Tapes, DVDs, and CDs	35
Carpeting	15	Sharps	35-36
Cellular Phones	15-16	Smoke Detectors	36-37
Cleaning Supplies	16	Sporting Goods	37
Clothing and Shoes	16-18	Styrofoam	37
Computers and Disks	18-19	Tires	38
Dry Cleaning	19-20	Toner Cartridges	38-39
Drywall	20	Tools	39
Egg Cartons	20-21	Toxics	39
Electronics	21	Toys and Games	40
Equipment Rental	22	Video Tapes	40-41
Fire Extinguishers	22	Yard Waste	41
Fluorescent Light bulbs	22-23		
Food	23-24		



## Construction Waste Management Resources

[DEQ Solid Waste](#) -Web site

[DEQ Hazardous Waste](#) -Web site

[Solid Waste Exemptions](#) -Web site

Bottom Pg1  
has a link to  
resources on  
toxics such as  
asbestos, lead  
& mercury.

[www.deq.state.mi.us/documents/deq-ess-p2-green-wmresources.doc](http://www.deq.state.mi.us/documents/deq-ess-p2-green-wmresources.doc)



## Construction Related Environmental Publications



Environmental Science and Services Division  
Michigan Department of Environmental Quality  
PO Box 30457 Lansing, MI 48909-7957



This list is designed to make it easier and provide direct access to the publications you need. Where possible, web site links are provided for the listed publications so they can be downloaded immediately. To avoid having to type sometimes long addresses, go to the website at the bottom of this page to find this in digital form and these links will actively connect you to the resources. If none is provided, indicate the number of copies you need on the list, complete the following information, and mail this to the address below, or fax to: 517-241-3571, or call 1-517-335-6250. For general information, contact the Environmental Assistance Center (EAC center) at 1-800-662-9278. If you have any suggestions or comments, please forward them to the address below. Also visit DEQ's Construction website for more information at: [www.michigan.gov/deqconstruction](http://www.michigan.gov/deqconstruction)

Name:		Phone: with area code	
Company Name:			
Address:			
City:		State:	Zip Code:
Email:			

**Mail Request To:**  
**Ms Maggie Fields**  
Environmental Science and Services Division



# Building Savings

## Strategies for Waste Reduction of Construction and Demolition Debris from Buildings

*The Waste Reduction Record-Setters Project fosters the development of exceptional waste reduction programs by documenting successful ones. These programs can be used as models by others implementing their own programs to reduce disposal. This fact sheet packet is aimed at local governments that want to encourage more building-related construction and demolition debris recovery, building owners and developers interested in green building design, and building contractors seeking a competitive edge.*



### What is construction and demolition debris?

**Handout**

Construction and demolition (C&D) debris is produced during new construction, renovation,

[www.epa.gov/garbage/pubs/combined.pdf](http://www.epa.gov/garbage/pubs/combined.pdf)



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  - DEQ Training & Workshops

Handout

Compliance Resources

# Future Directions

- Efforts have begun to build buildings with deconstruction or remodeling in mind. Making buildings easier to remodel and deconstruct will make them more marketable to clients, reduce waste, and increase the quantity and quality of recyclable materials available during remodeling and when deconstructed. This movement is going by two different names.



# Wish list & Developing efforts

- Waste Exchange
- Drywall recycling collection
  - EPA, Manufacturers, Retailer take back program
- Community centered recycling

# Operations Review of Riverside Recycling Facility for the City of Portland, Maine

Conducted: Fall 2004 & Winter 2005

**GBB**

Gershman, Brickner & Bratton, Inc.

## 2007 Recycled 30,593 tons 46.5%!

- CPRC costs approximately \$3,000,000/ Year
- Revenue from commercial customers approximately \$2,650,000
- Cost to City is approximately \$350,000 / year



- City operations approximately 16,000 tons
- Resident “freebies” approximately 16,000 tons
- 32,000 tons x \$40 = \$1,280,000

Almost \$1,000,000 saved / year

**GBB**

Gershman, Brickner & Bratton, Inc.

# C&D Recycling at Fauquier County, VA

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**GBB**

Gershman, Brickner & Bratton, Inc.

# Fauquier Co. System





# C&D Waste Processed & Recovered (first 6 months)

<u>TYPE OF MATERIAL</u>	<u>Tons</u>	<u>%</u>
Asphalt Shingles (1)	37	0.1%
Carpet	191	0.6%
Fines	5,131	15.1%
Inerts (1)	4,329	12.7%
Metal - Ferrous 8"+	997	2.9%
Metal - Ferrous 8"-	191	0.6%
Metal - Non Ferrous	10	0.03%
Old Cardboard	408	1.2%
Plastic (Vinyl Siding, Piping & Buckets)	127	0.4%
Clean Wood	1,604	4.7%
<b>Subtotal Recovered:</b>	<b>13,025</b>	<b>38.2%</b>
Non-Recovered - C&D Waste to Landfill	21,064	61.8%
<b>TOTAL C&amp;D Received (7/1/07 - 12/31/07)</b>	<b>34,089</b>	<b>100.0%</b>

(1) Includes Separated Loads

# Dumpster Diving

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**THANK YOU!**

**Maggie Fields**

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